



The

GARzette



The Official Newsletter of the Gwinnett Amateur Radio Society

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www.GARS.org

**Don't forget to support our
advertisers at the back of the
GARzette.**



**GARS January Exhibition of the
Technical aspects of Amateur Radio
Held at the Gwinnett County Fairgrounds**

The next TechFest is January 11, 2025

**GARS Meeting: Modulation - Steve Back WB4OGY
Tuesday November 12, 2024 at 7:00 PM**



President's Message

From the President...

The weather has definitely changed, and fall is in full swing. However, being in Georgia means we might experience all four seasons within a single week. As the Thanksgiving holiday approaches, it's a great time to take stock, reflect on the year, and express our gratitude.

Thankfulness is a beautiful way to show appreciation and strengthen our connections with others. As amateur radio communicators, we understand the value of these connections, whether through a local ragchew or a long-awaited DX contact. By recognizing small acts of kindness, we cultivate a positive mindset and celebrate the joys of life. Sharing gratitude creates a ripple effect of goodwill, encouraging us to slow down and appreciate the moment. In that spirit of reflection, I would like to share my gratitude.

First and foremost, thank you to everyone who supported the recent Stone Mountain HamFest. Whether you volunteered to help set up, manned the front gate and parking lot, assisted those taking exams, or filled countless other positions, your time and effort were invaluable. As previously mentioned, events like these cannot happen without a small army of volunteers who keep everything running smoothly.

I'd also like to thank those who participated in operating events such as the Georgia QSO Party or Field Day. Whether you got on



the air, volunteered your station, helped set up and tear down, or simply came to socialize, your involvement is crucial. These events not only celebrate our fellow amateurs and foster social connections, but they also help showcase amateur radio to the public, potentially inspiring new hams.

Speaking of new hams, I want to extend a big shout-out to our education and VE teams. From connecting with students in our schools to the ARISS contact earlier this year (and the upcoming one next year), as well as conducting numerous ham cram sessions, you have introduced this service and hobby to the next generation.

For anyone who presented or helped out at a workshop this year, thank you for continuing to stimulate the minds of our membership with the vast array of topics in amateur radio and helping hams help other hams.

Finally, thank you to the entire executive team for helping make everything that GARS does throughout the year possible. And thank you to each and every member for being part of GARS.

73,

Kevin W4KIB
Club President

GARS Repeaters and Other Communications

<u>2 Meter Repeaters</u> 147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2 <u>1.25 Meter Repeater</u> 224.580(-) MHz Tone 100.0, 1.6 MHz Offset <u>70 Cm Repeaters</u> 444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100	<u>6 Meter Repeater</u> 53.110 (-1 MHz) No Tone (Offline for Maintenance) Other Resources: <u>APRS</u> 144.390 -- 1200 Baud W4GR <u>D-STAR (WD4STR)</u> 145.060 + (1.4 MHz) 440.550 + (5 MHz)	6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs Rd, Norcross 442.325 Operational in Buford 444.525 Operational in Snellville Link remote receivers being added
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Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJI. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

About the GARzette

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org> [PS— Articles to publish in the *GARzette*, either written by GARS

members or published elsewhere, are always welcome. —Ed.]

Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO

GARS Personalized Mugs for sale – Bits Print and Press



**Jolie
Dellaneve-
Brown,
KO4AHI**



mailto:bitsprintandpress@gmail.com

GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

Zoom login info will be posted to <http://www.gars.org> prior to the meeting.

GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- November 12 - Modulation - Steve Back WB4OGY
- December 7 – **GARS Holiday Party** and GARS Ham of the Year Announcement
- January 14 – High Altitude Balloons – Jack McElroy KM4ZIA

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hands-on Workshops)

- November 19 - Modulation - Steve Back WB4OGY
- December – No workshop in December
- January 21 – High Altitude Balloons – Jack McElroy KM4ZIA

GARS Meeting – November 12, 2024 Modulation by Steve Back WB4OGY

If you set your HT to 147.075 MHz and just press the button, you are not communicating. The voltage at the antenna moves up and down 147.075 million times per second. When you speak something about that up and down signal changes and modulation is the way in which it changes. Modulation is the way in which the signal changes. In this case the 147.075 MHz signal is called the carrier, and your voice is the information being carried. Tuesday we will learn a little about the methods used to carry voice and other signals having information. Information can be voice, pictures or other signals. In today's world voice, video and almost everything is converted into digital data that can be stored and modified by a computer.

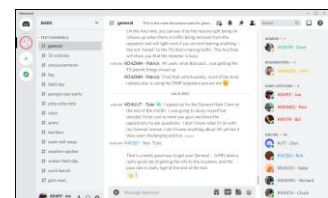
GARS Workshop – November 19, 2024

This is a GARS workshop to answer any questions about your Amateur Radio projects and adventures, and any clarifications you have about Steve's modulation presentation.

Feel free to bring any ham related questions you have including equipment setup and usage. We typically have 5 or more Elmers at each Workshop.

GARS would like to thank all of the members that participated and provided the URLs of their favorite web sites and things they brought in for show and tell.

Don't forget about our Discord utility for GARS announcements, news, activity spotting and more. See <http://www.gars.org> top of the home page. This is a sample of Discord. →





GARS Happenings

20 Years ago in the November 2004 GARzette:

- Interesting article about HARPO-1 Flight Overview by Darren Pierce AG4BF especially with the TechFest balloon launch coming up in January
- There in an article on The K7RA Solar Update regarding solar interference
- GARS Participated in Berkeley Lake Elementary School Science Night noting the GARS participants

You can always browse the GARzette archive at <http://www.gars.org/newsletters>. 73, Bob, K4CQO, GARzette Editor



[Health and Wellbeing](#) – Sandy Jackson, KJ4DRO

Look for this resource on [Email \(https://gars.org/contact/\)](mailto:https://gars.org/contact/) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

Out of almost 300 members, there are only five operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Ray – N4GYN David – KA4KKF Kevin – W4KIB Bill - WD4AMC Chuck – KK4TKJ

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact (Chuck) via Email ([Click Here to Email our Net Manager](#)) to help support the effort that makes GARS the great club that it is. See you on the Nets!

Fridays on 440 Net

The “**Fridays on 440 Net**” starts at 8:30pm on the 2nd and 4th Friday of the month on the 442.100 repeater. The general theme of the net will be a casual ragchew-style net with various, rotating topics of the night throughout its run. This net is also looking for additional NCS from the GARS members.

Contact Alex Kowalchuk, AK4AM or use our Net contact facility ([Click Here to Email our Net Manager](#)).



JAMBOREE ON THE AIR (JOTA)

JOTA was held on Saturday, October 19, 2024 and was supported by GARS at the VFW Post 5255, 368 Grayson Highway, Lawrenceville, GA 30046.

From Steve Back, WB4OGY:



I want to thank everyone who helped with JOTA. I will not try to list everyone but:

HAL W4IGE brought the ARES Trailer which is always a great way to show service to our scouts

Kevin W4KIB represented booth ARES and as President of GARS was a great help in making the event a success

Phil Krajec Our Council International Representative has provided patches to the youth for more years then I can count

Daniel Victorio Our District Executive will forever be a Youth in my mind helped in many ways

Some great pictures are available at <https://www.facebook.com/apalacheedistrictNEGA> along with a few included here.



High Altitude Balloons and Ham Radio

By Edwin Henderson, W4BSR

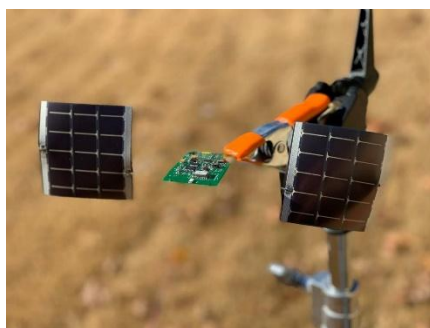
On January 11th, 2025, a young Ham, Jack McElroy, KM4ZIA will lead a forum on, and launch a high-altitude balloon (HAB) at **Gwinnett Amateur Radio Society's TechFest**. Jack is a high school junior in Forsyth County, and has been launching HAB's with his sister Audrey, KM4BUN since he was six years old.

Eventually, Jack started leading his own launches and demonstrations from what she had taught him. He has learned more over the years, and has been able to launch a variety of HABs with payloads ranging from simple circuit board trackers to complex payloads containing individual weather instruments, GPS systems, and biological specimens. With his experience, he has been able to teach about and help launch/provide launch materials for HABs at Youth On The Air (YOTA) Camps for the past 4 years with campers coming from all over North and South America to learn more about amateur radio. He has also presented HAB forums at the 2022 Hamvention Youth Forum, TechFest 2022, and Hamjam 2021. Jack also enjoys hiking in the North Georgia mountains with his SOTA rig.

The main goal of an HAB launch is to have fun, and Jack wants to introduce others to this unique aspect of amateur radio. Having a physical launch where people can interact with the balloon and see its true size, enhances the information shared in the forum presentation. Additionally, such a launch can almost be like a science lab where material learned in the presentation can then be applied and expanded upon in an interactive manner. The secondary goal of this launch is to see how far this balloon can fly. The type of balloon Jack will be launching is called a super-pressure balloon. This type of High-Altitude Balloon (HAB), remains at a constant altitude due to it being pushed with the same amount of buoyant force from the balloon's helium, as is being exerted by gravity. This state allows the balloon to potentially fly for months without popping. The balloon is made of a non-elastic polymer which is different from the stretchy polymers used to make party balloons, such as latex. The winds can carry these balloons around the globe, and sometimes these balloons can circumnavigate the globe several times.



JACK MCELROY, KM4ZIA



HAB TRANSMITTER WITH SOLAR PANELS



**A NON-ELASTIC POLYMER HAB
BEING FILLED**

The hardware that will be used in this launch consists primarily of the tracker that is being carried by the balloon. This tracker is a small circuit board that contains specialized components that optimize the efficiency of the tracker, for example, a supercapacitor, charged by paper-thin solar panels, powers the tracker and the GPS functionality of the tracker is from a computer chip that is half of the size of your pinkie nail. This tracker, called a Skytracker, is made by Bill Brown, WB8ELK who is also an HAB enthusiast, and an expert in his circuit-craft. The Skytracker Jack will be using for this launch will operate on HF, and it will transmit data via the WSPR protocol. However, additional data that is received

by WSPR receivers but not displayed on the WSPR website is brought over to the aprs.fi website to then be accessed. This additional data includes but is not limited to, precise location, speed (in miles per hour), and voltage.

With super-pressure launches, recovery is typically not an option. The hope for these balloons is to make it past the east coast and continue onwards, but sometimes balloons are taken down by storms off of the coast. With other types of HABs traveling short distances recovery can be an option as well.

A typical launch like this (excluding the price of helium) is about \$190, which includes the price of the Skytracker and balloon. Additionally, the materials are all available to a normal consumer and do not require any special certifications/licenses (with the exception of an amateur radio license of course).

For more information and to see Jack's HAB launch, attend the TechFest at the Gwinnett Fairgrounds in Lawrenceville, GA on January 11, 2025. Admission, door prizes, swag, and lunch are all free at this event, plus Volunteer Examiner led Amateur License exams will be administered. Go to techfest.info for more details.



The launch of an enormous Latex High Altitude Balloon that went to 97,000 feet carrying a 2m APRS Skytracker, a 70cm Big Red Bee Morse Code beacon, a 2m voice beacon, and a spider. The team recovered the balloon in a field.

Some Info from the Stone Mountain Hamfest



The Stone Mountain Hamfest was held on November 2nd & 3rd. GARS provided support for the HamFest with lots of volunteers to help set up and support the functioning of the successful weekend. GARS also ran the exam testing and below is a summary of the testing.



Exams at the Stone Mountain HamFest, by Dave Bruse, W4DTR (provided on 11/8/24)

We held exam sessions Saturday afternoon and Sunday morning. All license upgrades were processed by the FCC Monday morning. All new hams were billed for their \$35 FCC fee by the FCC Monday morning. Most new hams paid their fees Monday and their licenses were issued by the FCC Tuesday Morning. The last new ham to pay their \$35 FCC fee did so yesterday and was issued their new license this morning.

Saturday:

33 applicants (higher than average - 20-year average is 28)

21 passed

64% pass ratio (lower than average - average is in the low 70% range)

Sunday:

8 applicants (lower than average - 20-year average is 10)

6 passed

75% pass ratio (higher than average - average is in the low 70% range)

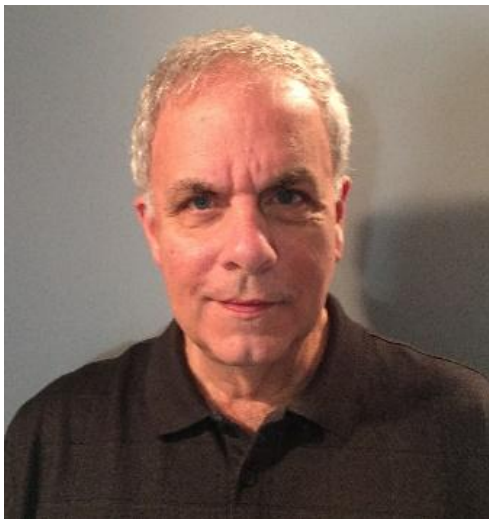
Summary:

We had a minor internet issue Saturday, which was resolved within 15 minutes. Other than that, we didn't have any other issues or complaints. We processed all the applicants both days much faster doing electronic exams and with fewer VE's, as opposed to paper exams. All the applicants seemed very pleased.

The Collins 30L-1 Linear Amplifier

Vintage Amateur Radio

de Bill Shadid, W9MXQ



Some of the most successful and historically dependable linear amplifiers offered to the amateur radio community, beginning in the 1960's, came from the R. L. Drake Company of Miamisburg, Ohio USA. While not a producer of the volume of amplifiers made by Heathkit in the same time period, Drake certainly was a contender in the market. This article will discuss the features of the first two Drake Linear Amplifier models. Two subsequent articles will cover the later Drake Amplifiers with attention paid to common failures that can occur across the several products. Some of this detail can apply to other brands of amplifiers of similar design.

Drake's first amplifier and its successor became classics, and in my opinion, two of the finest linear amplifiers made available to the amateur radio community – when cost and effective power are considered. The first model is shown here . . .



Drake L-4 Linear Amplifier

WB4HFN

This first amplifier was meant to match the Drake TR-3 Transceiver that was introduced in 1963, the R-4 Receiver/T-4X Transmitter from 1964, and the early TR-4 from 1964. Here are those matching components:



Drake TR-3 HF Transceiver

W9MXQ



Early Drake TR-4 HF Transceiver

W9MXQ



Drake R-4 HF Receiver

WB4HFN

Drake T-4X HF Transmitter

WB4HFN

The Drake L-4 Linear Amplifier had the following specifications:

- Two Eimac 3-400z or Amperex 8163 Triode Tubes
- 2000 Watts PEP Input SSB or 1000 Watts CW / RTTY
- Linear AM input power to be held to 500 watts (in SSB Mode)
- 80-10 Meters (WARC Bands using close-in appropriate band¹)
- Separate L4-PS Power Supply (see picture below)



L4-PS HV Power Supply Views (Front and Back)

W9MXQ

There appears to have been only one version of the L-4 Linear Amplifier. Unlike the later L-4B, some features were either absent or not as conveniently accessible. For instance, the metering on the L-4 was as follows:

- Top Meter – Plate Current only
- Bottom Meter (on rotary switch, functions – left to right)
 - Grid Current
 - Plate Voltage
 - Relative Output

ALC Threshold was adjustable, via a control that was located on the rear panel. Also on the rear panel were connectors for feeding high voltage (through a Millen High Voltage Connector) and control interface (through a large, 8-pin, Jones Connector) to the separate L4-PS HV Power Supply. The interface cables and main AC feed cables were hard wired to the L-4-PS. The transformer providing filament voltage for the final amplifier tubes, the meter lamps, and the voltage for the transmit/receive control relay was inside the RF Cabinet with primary voltage fed via the control interface cable.

Like some other amplifiers of the time (such as the Heathkit SB-200 and SB-220), there was no way to allow the Drake L-4 Amplifier to operate in Stand By mode – that is, no way to have the amplifier under power but not operating when the exciter was transmitting. The addition of a front panel mounted Stand By switch – which merely interrupted the PTT line from the exciter when high power operation was not desired – was probably the most popular field modification on the Heathkit amplifiers found today.

Presumably, Drake learned from the short life of the L-4 Linear Amplifier because they soon introduced its replacement, the L-4B.



Drake L-4B Linear Amplifier (Early Model)

W9MXQ

As you can see, the L-4B took most of its styling cues from the original L-4. The L4-PS HV Power Supply changed a bit in terms of the location of the high voltage fuse resistor being moved from the negative side of the voltage feed to the positive side. This change may also have appeared in the later shipments of the original L-4 amplifier model.

The Drake L-4B Linear Amplifier had the following specifications:

- Two Eimac 3-500z or Amperex 8802 Triode Tubes
- 2000 Watts PEP Input SSB or 1000 Watts CW / RTTY
- Linear AM input power to be held to 500 watts (in SSB Mode)
- 80-10 Meters (WARC Bands using close-in appropriate band¹)
- Separate L4-PS Power Supply

Pictured above is the first of three versions of the L-4B. Metering and control features of all three versions were very identical. But metering was greatly improved over the original L-4 model:

- Top Meter – Plate Current only
- Bottom Meter (on rotary switch, functions – left to right)
 - Grid Current
 - Plate Voltage
 - Forward Power (3,000 watts)
 - Reflected Power (300 watts)
 - Forward Power (300 watts)

The availability of a true wattmeter was an excellent feature. The selection of 300 and 3,000-watt forward ranges was tied to another feature of the L-4B – the AGC Threshold Control. It was moved to the front panel. And it included an integrated push-pull Operate/Standby switch. In the standby position the meter could be set to accurately read the power level of the exciter as it by-passed the amplifier. (Be careful – do not leave the meter in the 300-Watt Forward position when using the amplifier!)

Here are two product models that matched the L-4B Linear Amplifier in its Early Model design format:



Drake R-4B HF Receiver



Drake TR-4 HF Transceiver (Late Model)

Drake Model Examples matching the Early Model L-4B Linear Amplifier

W9MXQ

In 1973, Drake released the “C” version of the R-4/T-4X line (the R-4C Receiver and the T-4XC Transmitter models) and the TR-4 Transceiver (TR-4C model). The L-4B did not change model number but did change in appearance. Below is a picture of the midway model of the amplifier.



Drake L-4B Linear Amplifier (Midway Model)

W9MXQ

The design change is small but is very noticeable once you know where to look go back to the L-4B (Early) picture and compare it to the picture just above of the L-4B (Midway). Look at the edges of the front panel and notice that there is a silver color outer ring at the top, bottom, and sides of the panel. Then look also at the matching product shown with that early version – those products have that same design feature on their front panel.

Below are products that include the same front panel style as the Midway Model version of the L-4B:



Drake R-4C HF Receiver

W9MXQ



Drake TR-4CW-RIT HF Transceiver

W9MXQ

Other products in the series were similarly updated. These include the MN-2000 Matching Network, MN-4 Matching Network, the CS-4 Station Console, and the CC-1 Converter Console. Products such as the FS-4 Frequency Synthesizer accessory for the R-4C and SPR-4 Receivers were not available until after the styling change, so no early design version exists.

Some examples of this new styling are shown below.



Drake MN-2000 Antenna Network

W9MXQ



Drake SPR-4 HF Receiver²

W9MXQ



FS-4 Frequency Synthesizer²
W9MXQ

At the time, the FS-4 was a unique product that replaced the Range Crystals in the 4-Line Receivers and Transmitters plus, depending on the internal main oscillator crystal, can be used with the Drake SPR-4 or 2-C Receivers.

The Late Model of the L-4B Linear Amplifier was identical to the Midway Model except that it lost the ability to work on the 10-Meter band. This was in keeping with legal issues tied to the illegal use of these products on the 11-Meter Citizens Band.



Drake L-4B Linear Amplifier (Late Version)

KO4BG

The Late Version was identical to the Midway Version except for the lack of a 10-meter position on the bandswitch. There was a Drake documented procedure to activate 10-meter operation by a licensed amateur operator. These amplifiers are rare – and it is obvious on the units that Drake used parts from the earlier model even to the point of painting over the “10” printing on the panel PLATE and BAND legends with a silk-screened circle over the number. The Late Versions indicate model “L-4B-1,” on the rear panel. I have never seen a late version L-4B but “Woody,” KO4BG sent the above pictures of his amplifier. Woody further reports that the “dots” covering the “10” number on the PLATE and BAND controls are easily removed to reveal the “10” that was hidden from the factory.

A collector’s note for the L-4B relates to the three screws across the top edge and the three screws along the bottom edge of the front panel of the Midway and Late Versions. These are most often silver (likely cadmium plated). But, on some units they are black – chemically blackened, not painted. This is also true of other units, such as the TR-4CW or TR-4CW-RIT, the R-4C, and the T-4XC, the MN-2000, and others of the same timeframe.

The L-4 and all the L-4B versions were equipped with a pressurized chassis. Air intake was on the back panel to a squirrel cage fan that forced air into the sealed under-chassis, through the glass chimneys on each tube, and then out via the perforated top cover.

In the late 1970’s, Drake moved to their 7-Line Transceiver, Receiver, and accessory line. These replaced the venerable 4-Line series. The TR7 HF Transceiver was introduced in 1977 to soon be joined by the matching L7 Linear Amplifier. The Drake L7 and the later L75 will be covered in a future article. Another article will cover the failures, foibles, preventative maintenance, and repairs of all these quality products.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, W9MXQ@TWC.com.

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a lot more than a proofreader

as he nearly always adds commentary that makes it into the article.

Credits and Comments:

¹ Coverage of the WARC Bands (30, 17, and 12 meters) may require some returning of the input circuits – as covered in the Drake Operating Manual for the L-4 and L-4B Amplifiers.

² Subject of a future article.

³ Product specifications for the Drake L-4 and L-4B models shown come from their respective Instruction Manuals – all of which exist in my files. Most Drake manuals are available on line for downloading. I download Drake manuals from Ron Baker, WB4HFN, at:
<http://www.wb4hfn.com/DRAKE/DrakeManuals.htm>.

⁴ Colors for Drake radios were very consistent through the years. Be advised that such color match does not extend to my pictures in this article! Drake did go to an epoxy panel paint in later models – models that did not have the silver trim ring around the edges of the front panel. The gray on those units is slightly darker than the gray on earlier models. I am blessed, or cursed, depending on how you look at it, with a good color difference perception. This was observed using the MacBeth Color Checker Test in my early professional career in Automotive Trim Systems with 3M Company.

⁵ I am indebted for the kindness of several members of the Drake Technical Net (7.238 MHz, Sunday afternoons at 3:00 PM) for their contributions to this article and their support of my writing efforts on old radios. They include, but are not limited to KO4BG, WB4HFN, NO8J, WA8SAJ, and WB0IQK. I am certain to have missed someone – if so, I apologize and will try to include you in two more articles on Drake Linear Amplifiers.

© **W9MXQ**



GARS Membership

New Members in October

Freddy Ferrer (KQ4UDS)
Erick Kobres (K0BRE)
Andrew Souvinette (KQ4VUL)
Timothy Yehl (KQ4UGH)

New Members: 4

**Total Members as of
November 1, 2024
349**

Join GARS members for our:

- weekly lunch bunch at 11:30 AM most Fridays
- weekly breakfast gathering at 8:00 AM most Saturdays



Friday weekly gatherings are held at the [Chilli's](#) at:

[947 Lawrenceville Suwanee Rd
Lawrenceville, GA 30043](#)

Saturday weekly gatherings are held at the [Cracker Barrel](#) at:

[75 Celebration Dr
Suwanee, GA 30024](#)

Birthdays in November

John Bachtel (NR4JB)
David Bearden (KQ4QIL)
Alex Blitch (K4ALX)
Pamela Brown (KJ4RYV)
Will Carson (KZ4HV)
Julia Collier
Drake Cullinan (KN4ZEY)
Garrison Daniel (KO4FPH)
Anthony De Lucia (W4OG)
Alison Delaney
Christi Dickerson
Matthew Dyals (KN4WBL)
Robert Eybers (KN4WBM)
Carey Fisher (WB4HXX)
Puddin Garrison (KJ4QIB)
Eddie Geike (AK4WM)
Colt Goodrum
Scott Karlins (KO4NXZ)
Danny Kelley (KI4KXO)
Marc Lulkin (K9TOE)
Donna McCord (KM4FMW)
Emma Mellichamp
Kathy Mellichamp
Nick Nikley (N0NCQ)
Linda Pace
Kevin Scott (K4GTR)
Andre Steyn (W7ALS)
Lawrence Teper (KN4CGP)
Jim Webb (W4NTA)
Nova Whatley (KF4HLG)
Karen Whited (AB4NW)

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – www.gars.org/gars/membership/. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at Email (<https://gars.org/contact/>) with any changes to your Membership information.

Membership Chair: Karen Albritton, KI4HPP

Committee Members: Dave Bruse, W4DTR

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - <http://www.arrl.org>.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - <https://www.fcc.gov/wireless/universal-licensing-system>. License renewal is subject to the \$35 FCC fee.



Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



Discord Request:

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GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049

Officers



Kevin Igarashi-Ball, President W4KIB



Alex Kowalchuk, Vice President AK4AM



Drew White, Secretary KQ4NUQ



Glen Wendt, Treasurer W3WWT



Kevin Scott, Program Manager K4GTR

Managers and Committee Chairs



Karen Albritton, Membership Chair KI4HPP



Dave Bruse, VE Team Leader W4DTR



David Adcock, Webmaster KA4KKF



Ralph Pickwick, Education Chair KJ4CNC



Earl Whatley, Apparel Manager AF4FG



Bob Hoffmann, GARzette Editor K4CQO



Eddie Foust, Repeater Chair WD4JEM



Mike Weathers, WAS / DXCC QSL Card Checker and Historian ND4V



Chuck McCord, Net Manager KK4TKJ



Steve Back, Technical / RFI Advisor WB2OGY



Dallas Mellichamp, Workshop Leader N4DDM



Sandy Jackson, Health and Wellbeing KJ4DRO



Kevin Igarashi-Ball, Multimedia Chair W4KIB



Dallas Mellichamp, Georgia QSO Chair N4DDM



Neil Derryberry, Elmer Manager WD4NET



Edwin Henderson, TechFest Chair W4BSR

Open Winter Field Day Chair, Field Day Chair, TechFest Chair

Directors and Trustees



Joe Biddle, AD4PZ



Kyle Albritton, W4KDA



John Davis, WB4QDX



Bill Cherepy, WB4WTN W4GR Trustee



GARS Meeting Minutes

GARS – MEETING 10/8/2024

- President Kevin Igarashi-Ball (W4KIB) opened the meeting at 7:00 p.m. and closed the meeting at approximately 8:20 p.m.
- New hams and visitors: Kevin (W4KIB)
 - Andrew, KQ4VUL, introduced himself as a recent graduate of the ham cram class and passed his test. He thanked Ralph for his assistance.
 - No additional new hams or upgrades were reported.
- Acknowledgment of several October birthdays within the group.
- Treasurer Report: Glen (W3WWT)
- Membership (W4KIB): Currently there are 346 members, with one new member joining since the last meeting.
- Programs Update (Kevin K4GTR)
 - October: Show and Tell on favorite websites and apps.
 - November: Steve Back will present on types of modulation in ham radio.
 - December: Holiday party
 - January: Jack McElroy, who will discuss balloon launch and apps for tracking them from TechFest.
- Ham of the Year Nominations(W4KIB)
 - Nominations are open and due by the end of the month.
 - The winner will be announced at the holiday party.
- Education Committee (Ralph KJ4CNC):
 - Recent HamCram session was very successful, with all seven students passing their exams.
 - A new ARISS contact has been approved for Woodward Mill Elementary, which will likely take place early next year.
 - Volunteer Call for School Radio Club at Lilburn Elementary which meets monthly
 - School Club Roundup event is coming October 21st to 25th.
 - Looking for volunteers to assist students with making radio contacts.
- Stone Mountain HamFest scheduled November 2-3 at the Gwinnett Fairgrounds. Volunteers are needed.

- North Fulton HamJam:
 - Taking place the following Saturday after the Hamfest, with forums and major giveaways. Proceeds support youth programs in ham radio, including the ARRL's work with schools and ARISS.
- Upcoming events (W4KIB):
 - Holiday Party: December 7th. Meal tickets are available on the website.
 - TechFest (January 11th): Volunteers needed for setup and support.
 - Winter Field Day: Plans in progress for January.
- Asking members to keep Earl (AF4FG) in their thoughts
- Paul Kelly (W4KLY) helping with K8WDJ SK estate – half of proceeds from sale will go to GARS education fund

Workshop Minutes – October 15, 2024

Number in Attendance: 10

Workshop Topic: GARS Show-n-Tell, Home Brew/Favorite Projects

Presenter: Dallas N4DDM

Brief Summary: We didn't have any discussion on GARS Show-n-Tell, Home Brew, or Favorite Projects so we dove into;

- For Wayne's antenna installation; we need a small crew of 3-5 helpers to raise his vertical above the roof's peak. Wayne has done most of the installation but needs a few more helpers...
- JOTA
- HamFest Volunteers
- Holiday Party
- TechFest Volunteers
- We had two new visitors; Matt and Harry KO4FGK.
- Harry brought in his IC-7100 and got help from Steve WB2OGY and David KA4KKF to get his rig and laptop configured to work FT-8.

Elmers are always present at the GARS Workshops. Feel free to bring your questions to the Workshop and if your project is small enough to get to the meeting, let us know in advance via email so we can have tools, test gear, etc.



Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar

> For more information click the links <

2024 January

1 [Straight Key Night](#)

6 [Kid's Day](#)

6-7 [RTTY Roundup](#)

20-22 [January VHF Contest](#)

February

12-16 [School Club Roundup](#)

17-18 [International DX – CW](#)

March

2-3 [DX Contest -- SSB](#)

April

21 [Rookie Roundup – Phone](#)

May

No planned contests

June

1-2 International Digital Contest

8-10 [June VHF](#)

15 [Kid's Day](#)

22-23 [Field Day](#)

July

13-14 [IARU HF World Championship](#)

August

3-4 [222 MHz and Up Dis Contest](#)

17-18 [10 GHz & Up – Round 1](#)

18 [Rookie Roundup – RTTY](#)

24-25 [EME - 2.3 GHz & Up](#)

September

14-16 [September VHF](#)

21-22 [EME - 2.3 GHz & Up – Rnd 2](#)

21-22 [10 GHz & Up – Wknd 1](#)

October

19-20 [EME - 50 to 1296 MHz](#)

21-25 [School Club Roundup](#)

November

2-4 [Nov. Sweepstakes - CW](#)

16-17 [EME - 50 to 1296 MHz](#)

16-18 [Nov. Sweepstakes - Phone](#)

29-30 [CQ World Wide DX - CW](#)

December

6-8 [160 Meter](#)

14-15 [10 Meter](#)

22 [Rookie Roundup–CW](#)

For more information:

<http://www.arrl.org/contest-calendar>

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans to attend]

11/23/2024 - [Flamingo Net Flea at U. of Miami](#)

Location: Coral Gables, FL

Type: ARRL Hamfest

Sponsor: Flamingo Net

Website: <http://FlamingoNet.8m.net>

12/13/2024 - 12/14/2024

[Tampa Bay Hamfest, ARRL West Central Florida Section Convention](#)

Location: Plant City, FL

Type: ARRL Convention

Sponsor: Florida Gulf Coast Amateur Radio Council

Website: <http://www.fgcarc.org/>

01/04/2025 - [BCARC Annual Freezefest](#)

Location: Locust Fork, AL

Type: ARRL Hamfest

Sponsor: Blount County Amateur Radio Club

Website: <http://www.w4blt.org>

01/11/2025 - [GARS TechFest](#)

Location: Gwinnett County Fairgrounds, GA

Type: Technical Fest

Sponsor: Gwinnett Amateur Radio Society

Website: <http://www.GARS.org>

01/10/2025 - 01/11/2025

[2025 Southwest Florida Regional Hamfest, ARRL Southern Florida Section Convention](#)

Location: Fort Myers, FL

Type: ARRL Convention

Sponsor: Fort Myers Amateur Radio Club, Inc.

Website: <http://swflhamfest.info>

02/07/2025 - 02/09/2025

[Orlando HamCation, Southeastern Division Convention](#)

Location: Orlando, FL

Type: ARRL Convention

Sponsor: Orlando Amateur Radio Club

Website: <http://www.hamcation.com>

02/15/2025 - [Highlands County Amateur Radio Club Hamfest](#)

Location: Sebring, FL

Type: ARRL Hamfest

Sponsor: Highlands County Amateur Radio Club

03/22/2025 - [DeKalb County Amateur Radio Club Swap Meet](#)

Location: Fort Payne, AL

Type: ARRL Hamfest

Sponsor: DeKalb County Amateur Radio Club

Website: <http://w4dgh.org/meet>

04/05/2025 - [Daleville Area Hamfest](#)

Location: Daleville, AL

Type: ARRL Hamfest

Sponsor: Daleville Area Amateur Radio Service

Website: <https://daleville.us/daleville-area-hamfest>

For more information: www.arrl.org/hamfests-and-conventions-calendar

When searching by division, remember some states adjacent to GA are in different divisions: Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC



GARS Events Calendar for 2024		GARS Recurring Calendar
TechFest	January 13 2024	<ul style="list-style-type: none">• 2nd Tuesday of the month at 7 pm (except December) Monthly Club Meeting 690 Airport Rd, Lawrenceville, GA 30046• 3rd Tuesday of the month at 7 pm (except December) Monthly Workshop 690 Airport Rd, Lawrenceville, GA 30046• 3rd Sunday of the Month at 2 pm GARS Ham Exam Session 690 Airport Rd Lawrenceville, GA 30046• Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater• 2nd and 4th Friday at 8:30 pm. GARS 440 Talk Net• Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater• Every Friday at 11:30 am, GARS Lunch at Chilli's• Every Saturday at 8:00 am GARS Breakfast at Cracker Barrel
Winter Field Day	January 27-28 2024	
Dog Show Fundraiser	March 5-6 2024	
Spring Technician HamCram	March 23-24, 2024	
Georgia QSO Party	April 13-14 2024	
North metro area Fox Hunt	April 2024	
Memorial Day Parade	May 27 2024	
ARC/KARC Hamfest	June 1 2024	
Field Day	June 22-23 2024	
Summer General HamCram	July 27-28, 2024	
Fall Technician HamCram	September 28-29 2024	
JOTA	October 2024	
Stone Mt. Hamfest	November 2-3 2024	
Holiday Party	December 7 2024	
GARS Calendar for November 2024		

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
					11:30 AM Lunch at Chillis	8:00 AM Breakfast at Cracker Barrel
3	4	5	6	7	8	9
	7:30 – 8:00 PM 2M Net	7:00 PM Exec Meeting			11:30 AM Lunch at Chillis 8:30 - 9:30 PM 70CM Talk Net	8:00 AM Breakfast at Cracker Barrel
10	11	12	13	14	15	16
	7:30 – 8:00 PM 2M Net	7:00 PM Meeting EAA 690 Hangar			11:30 AM Lunch at Chillis	8:00 AM Breakfast at Cracker Barrel
17	18	19	20	21	22	23
2:00 PM GARS Ham Radio Exams, EAA 690 Hangar	7:30 – 8:00 PM 2M Net	7:00 PM Workshop Meeting EAA 690 Hangar			11:30 AM Lunch at Chillis 8:30 - 9:30 PM 70CM Talk Net	8:00 AM Breakfast at Cracker Barrel
24	25	26	27	28	29	30
	7:30 – 8:00 PM 2M Net				11:30 AM Lunch at Chillis	8:00 AM Breakfast at Cracker Barrel

Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

GARS Exam Sessions are held the 3rd Sunday of the month

Preregistration is **REQUIRED**

Doors open at 1:45pm, exams start promptly by 2:00pm

For more information and to preregister, please visit <https://gars.org/exams/>

GARS VE-Team

VEC: W5YI-VEC

EAA 690 Hangar

690 Airport Rd

Lawrenceville, GA 30046

GARS VE Team Leaders

E-mail: exams@gars.org.



September 2024 Results

The GARS VE Team exam session results from October 20th.

1 Upgrade to General:

- CHARLES HAWKINS –KQ4USL

4 New Technicians:

- David A Crump Jr: KQ4WLM
- Ramey L Nubern: KQ4WLJ
- MADISON B WALKER: KQ4WLK
- Slade Willis: KQ4WMU

2 New Generals (passed both Technician and General):

- Erick Kobres: K0BRE
- Benjamin A Oakes: KQ4WJW

Special thanks to the Volunteer Examiners who made this exam session possible:

AB4QQ RUSSELL PREVOST
 KM4SWL RICHARD KITZ
 WB2OGY STEVEN BACK
 W4DTR DAVID BRUSE
 NG4H WILLIAM BEGUHN
 W4SHT Lynn Harker
 K4CQO Bob Hoffmann

Thanks & 73, Chuck McCord KK4TKJ (Co-CVE)

Local Ham Radio Exams

In order to find an exam session near you, please visit

http://www.arrl.org/exam_sessions/. Contact the information in the listing for further information.



Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit

<http://www.arrl.org/find-a-club>. Contact the club for meeting information.



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1/2 page	\$150
Full page	\$200

For swap items, post and see items on GARS groups.io (<https://groups.io/g/GARS>).

Ready to take your Ham Radio Exam?

Go to <https://GARS.org/exams/> to learn more, and to register for an upcoming exam session.